

CLAIMS

What is claimed is:

1. A method of cleaning a process chamber having interior surfaces, comprising the steps of:

providing a repellent coating layer of first polarity on said interior surfaces of said process chamber; and

cleaning said process chamber by introducing a cleaning gas of second polarity opposite said first polarity into said process chamber.

2. The method of claim 1 wherein said first polarity is a hydrophobic polarity and said second polarity is a hydrophilic polarity.

3. The method of claim 1 wherein said repellent coating layer has a thickness of at least about 2 μm .

4. The method of claim 3 wherein said first polarity is a hydrophobic polarity and said second polarity is a hydrophilic polarity.

5. The method of claim 1 wherein said repellent coating layer is silicon.

6. The method of claim 5 wherein said repellent coating layer has a thickness of at least about 2 μm .

7. The method of claim 1 wherein said repellent coating layer is silicon carbide.

8. The method of claim 7 wherein said repellent coating layer has a thickness of at least about 2 μm .

9. A method of cleaning a process chamber having interior surfaces, comprising the steps of:

providing a repellent coating layer of first polarity having a thickness of from about 2 μm to about 10 μm on said interior surfaces of said process chamber; and

cleaning said process chamber by introducing a cleaning gas of second polarity opposite said first polarity into said process chamber.

10. The method of claim 9 wherein said first polarity is a hydrophobic polarity and said second polarity is a hydrophilic polarity.

67,200-1165
2003-0354

11. The method of claim 9 wherein said providing a repellent coating layer on said interior surfaces of said process chamber comprises the steps of setting said process chamber at a temperature of from about 500 degrees C to about 700 degrees C and a pressure of from about 10 Torr to about 760 Torr and introducing a layer-forming gas into said process chamber.

12. The method of claim 9 wherein said repellent-coating layer is silicon.

13. The method of claim 12 wherein said providing a repellent coating layer on said interior surfaces of said process chamber comprises the steps of setting said process chamber at a temperature of from about 500 degrees C to about 700 degrees C and a pressure of from about 10 Torr to about 760 Torr and introducing silane gas into said process chamber.

14. The method of claim 9 wherein said repellent-coating layer is silicon carbide.

67,200-1165
2003-0354

15. The method of claim 14 wherein said providing a repellent coating layer on said interior surfaces of said process chamber comprises the steps of setting said process chamber at a temperature of from about 500 degrees C to about 700 degrees C and a pressure of from about 10 Torr to about 760 Torr and introducing tri-methyl silane gas into said process chamber.

16. A method of cleaning a process chamber having interior surfaces, comprising the steps of:

providing a repellent coating layer of first polarity having a thickness of at least about 5 μm on said interior surfaces of said process chamber; and

cleaning said process chamber by introducing a cleaning gas of second polarity opposite said first polarity into said process chamber.

17. The method of claim 16 wherein said first polarity is a hydrophobic polarity and said second polarity is a hydrophilic polarity.

67,200-1165
2003-0354

18. The method of claim 16 wherein said providing a repellent coating layer on said interior surfaces of said process chamber comprises the steps of setting said process chamber at a temperature of from about 500 degrees C to about 700 degrees C and a pressure of from about 10 Torr to about 760 Torr and introducing a layer-forming gas into said process chamber.

19. The method of claim 16 wherein said repellent-coating layer is silicon.

20. The method of claim 16 wherein said repellent-coating layer is silicon carbide.